



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,679	08/10/2001	Minoru Toriumi	025311-0107	3716

22428 7590 07/29/2003

FOLEY AND LARDNER
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

CHU, JOHN S Y

ART UNIT	PAPER NUMBER
----------	--------------

1752

DATE MAILED: 07/29/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,679

Applicant(s)

TORIUMI ET AL.

Examiner

John S. Chu

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

This Office action is in response to the amendment filed June 9, 2003.

1. The rejection under 35 U.S.C. 102(b) as being clearly anticipated by Jp-05127370 (KOKUBO et al), VARANASI et al or JP-265177 (IWASA et al). is **withdrawn** in view of the amendment canceling claim 1.
2. The rejection under 35 U.S.C. 103(a) as being unpatentable over VARANASI et al, or SEO et al. is **withdrawn** as failing to disclose the claimed invention as now recited in claim 2 having the specific compound formula 1.
3. The rejection under 35 U.S.C. 103(a) as being unpatentable over SEO et al. is **withdrawn** as failing to disclose the claimed compound of formula 1 in the resist composition.

Claim Rejections - 35 USC § 103

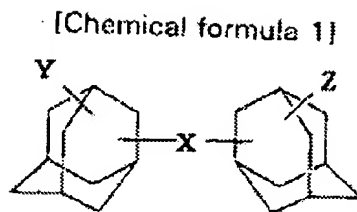
4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over NOZAKI et al.

The claimed invention is now drawn to a resist composition comprising: at least one type of a first compound having two or more intramolecular adamantyl structures; a base resin; and a second compound which generates an acid by active beam irradiation; wherein at least one type of said first compound is represented by the chemical formula 1:

Art Unit: 1752



wherein X is $-(\text{OCO})_m-(\text{CH}_2)_n-(\text{COO})_m-$ wherein $m=0$ or 1 and $n=0$ or 1,2, or 3 provided when $n = 0$, $m = 0$; and

Y and Z are H, OH, F, Cl, Br, R or COOR where Y may be Z, or Y and Z may be introduced in a single adamantyl structure and R represents a straight or branched alkyl group having 1 to 8 carbon atoms.

NOZAKI et al discloses a photoresist composition comprising as additives unpolymerized compounds found in column 31, line 36 – column 33, line 5, wherein these compounds disclose structures which meet the claimed second compound of claim 2, see compound (XLVI). NOZAKI et al goes on to disclose that if the non-polymeric compounds are used an alkali-soluble resin is added as a combination to give the required resist characteristics to the resist composition (column 32, lines 59-65).

NOZAKI et al lacks the presence of the unpolymerized compound used in an explicit example in a photoresist composition.

It would have been *prima facie* obvious to one of ordinary skill in the art of photoresist composition to use any of the listed compounds in column 31, line 36 – column 33, line 5 as a dissolution inhibitor with a base resin and an acid generator in the photoresist composition with the reasonable expectation of same or similar results as recited in NOZAKI et al for a photoresist suitable for excimer laser lithography, highly sensitive resist composition and having excellent dry etch resistance without swelling.

Art Unit: 1752

The arguments by applicant have been noted, however they have not overcome the rejection under 35 U.S.C. 103 over NOZAKI et al by submitting evidence for secondary considerations. The reference clearly motivates the skilled artisan to use nonpolymeric compounds as listed above with an alkali-soluble resin to give a photoresist composition that is expected to perform in the disclosed manner as recited in the reference for excellent dry etching resistance, good adhesion and faithful reproduction of the pattern mask.

6. The IDS submitted April 14, 2003 is attached, however the references are crossed out, because they have been previously cited and made of record in the case, i.e. JP5-127370 to YAMANAKA et al was previously cited in the IDS received November 14, 2001, IWASA et al was previously cited in the IDS of November 14, 2001 and VARANASI et al was cited in the PTO-1449 as the U.S. Patent 6,124,074 to IBM.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

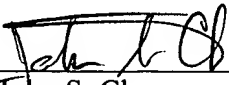
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 1752

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (703) 308-2298. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

The fax phone number for this Group is (703) 305-7718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.



John S. Chu
Primary Examiner, Group 1700

J.Chu
July 25, 2003